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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,299	09/26/2001	Guy Andrew Vaz	B-3834DIV of DIV	5641

7590 04/30/2003

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EXAMINER

PIERCE, JEREMY R

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 04/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/965,299	Applicant(s) VAZ, GUY ANDREW	
Examiner Jeremy R. Pierce	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 72-94 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 72-94 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4. 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 83 and 84 are objected to because of the following informalities: Claims 83 and 84 are directed to a method, but their parent claims are directed to a material. The Examiner will assume that the current language is a typing mistake, and that claims 83 and 84 should also be directed to a material. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 85, 88, 90, and 91 are rejected under 35 U.S.C. 102(b) as being anticipated by Dolowy et al. (U.S. Patent No. 4,259,112).

Dolowy et al. disclose a metal powder mixed in a polymeric binder solution that is added to chopped graphite tow (column 2, lines 25-44). The sheet is allowed to dry (column 3, lines 17-18), and is then mechanically rolled (column 4, line 46). With regard to claim 88, the metal alloy can be titanium (column 2, line 27). With regard to claims 90 and 91, the limitations of drying with an electric furnace and rolling with a certain pressure are processing limitation to a product claim that would not have a material effect on the final product. Once the examiner provides a rationale tending to show that

the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 72-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbett et al. (U.S. Patent No. 5,133,057) in view of Dolowy et al.

Corbett et al. disclose a fibrous material coated with a thermoplastic material that is infiltrated with a molten metal (Abstract). The fibers may be carbon or graphite (column 13, lines 16-17). The thermoplastic material may be any number of polymers and/or waxes (column 7, lines 32-41). Corbett et al. even mention adding powders to the molding mix (column 5, lines 14-17), but do not mention using metal powders in the polymer. Dolowy et al. disclose adding metal powder to polymeric material in a reinforced metal structure increases the strength of the material by increasing the bonding (column 1, line 55 –column 2, lines 23). It would have been obvious to one having ordinary skill in the art to include metal powder in the polymer of Corbett et al. in order to increase the strength of the metal material, as taught by Dolowy et al. Corbett

Art Unit: 1771

et al. disclose the shaped product can be carburized (column 16, lines 61-63). Corbett et al. also teach the metal matrix is produced by pressure or squeeze casting (column 17, lines 62-64). With regard to claims 73 and 86, ceramic powder or fibers may also be included (column 14, lines 45-48). With regard to claim 74 and 87, Corbett et al. do not disclose type 3K TOW 380 g/m², M60/T300 woven graphite. Since Corbett et al. is lacking a disclosure to the specific woven graphite, it would be necessary and therefore obvious for one to look to the prior art for suitable materials motivated by the expectation of successfully practicing the invention of Corbett et al. In the absence of unexpected results, it would have been obvious to one having ordinary skill in the art to select any suitable commercially available material, including 3K TOW 380, M60/T300, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. With regard to claims 77, 78, 88, Dolowy et al. disclose the powder to be aluminum, magnesium, copper, titanium, aluminum alloy, or ferrous alloy (column 2, lines 26-28). With regard to claims 79 and 90, Corbett et al. use a furnace to dry the composite (column 16, line 59). With regard to claims 80, 82-84, and 92-94, the molten metal applied to the composite can be aluminum alloy or beryllium (column 18, lines 51-54). The manner in which it is applied does not create a patentable difference in the products. With regard to claims 81 and 91, Corbett et al. do not disclose what pressure they squeeze cast the molten metal into the preform. However, the pressure used is a processing step that would be a result effective variable in controlling how much molten metal remained in the composite. It would have been obvious to one having ordinary

Art Unit: 1771

skill in the art to apply a pressure of 35 to 40 tons of compression to squeeze out as much molten metal as possible, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). With regard to claim 89, Dolowy et al. do not disclose how much powder to add to the polymer. However, the amount of metal powder present in the polymer would be a result effective variable that would alter the bonding strength of the composite. It would have been obvious to one having ordinary skill in the art to use an amount up to 50% by weight of metal powder in the polymer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent No. 3,953,647 to Brennan et al.; U.S. Patent No. 4,145,471 to Kendall et al.; and U.S. Patent No. 6,506,502 to Lo et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Pierce whose telephone number is (703) 605-4243. The examiner can normally be reached on Monday-Thursday 7-4:30 and alternate Fridays 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers

Art Unit: 1771

for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Jeremy R. Pierce
Examiner
Art Unit 1771

April 23, 2003



TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700